PATENT APPLICATION

PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Michael H. SCHMITT

On Appeal from Group: 1751

Application No.: 10/058,398

Examiner: P. Kumar

Filed: January 30, 2002

Docket No.: 111225

For: PROCEDURE FOR REMOVING A WATER-INSOLUBLE FINISH FROM ARAMIDE FIBERS

APPEAL BRIEF TRANSMITTAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached hereto are three (3) copies of our Brief on Appeal in the above-identified application.

Also attached hereto is our Check No. 151206 in the amount of Three Hundred Thirty Dollars ($330.00) in payment of the Brief fee under 37 C.F.R. 1.17(c). In the event of any underpayment or overpayment, please debit or credit our Deposit Account No. 15-0461 as needed in order to effect proper filing of this Brief.

For the convenience of the Finance Division, two additional copies of this transmittal letter are attached.

Respectfully submitted,

William P. Berridge
Registration No. 30,024

Melanie L. Mealy
Registration No. 40,085

Christopher W. Brown
Registration No. 38,025

WPB:MLM:CWB/rav
Date: February 19, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

COPY

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Michael H. SCHMITT

Application No.: 10/058,398

Filed: January 30, 2002

Group Art Unit: 1751

Examiner: P. Kumar

Docket No.: 111225

For: PROCEDURE FOR REMOVING A WATER-INSOLUBLE FINISH FROM ARAMIDE FIBERS

NOTICE OF APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES AND PETITION FOR EXTENSION OF TIME

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the Decision of the Primary Examiner dated September 9, 2003.

The $330.00 Appeal Fee ($165.00 Small Entity) is:

X Enclosed (our Check No. 151181)

_____ Not required (fee paid in prior appeal in this application with no Board Decision on the merits).

The shortened statutory period having expired December 9, 2003, it is hereby requested that the period for response be extended for three months. Included in our enclosed check is $950 in payment of the fee for a three month extension of time for filing this Notice of Appeal.

The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Deposit Account No. 15-0461. Two duplicate copies of this document are enclosed.

Respectfully submitted,

William P. Berridge
Registration No. 30,024

Christopher W. Brown
Registration No. 38,025

02/20/2004 SSANDARA 00000020 10058398
01 FC:1253 950.00 OP

WPB:CWB/rav
Date: February 19, 2004

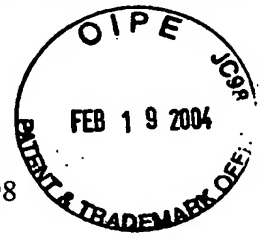
OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

Image AF #

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re the Application of

Michael H. SCHMITT

Application No.: 10/058,398

Filed: January 30, 2002

Group Art Unit: 1751

Examiner: P. Kumar

Docket No.: 111225

For: PROCEDURE FOR REMOVING A WATER-INSOLUBLE FINISH FROM ARAMIDE FIBERS

NOTICE OF APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES AND PETITION FOR EXTENSION OF TIME

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the Decision of the Primary Examiner dated September 9, 2003.

The $330.00 Appeal Fee ($165.00 Small Entity) is:

X Enclosed (our Check No. 151181)

_____ Not required (fee paid in prior appeal in this application with no Board Decision on the merits).

The shortened statutory period having expired December 9, 2003, it is hereby requested that the period for response be extended for three months. Included in our enclosed check is $950 in payment of the fee for a three month extension of time for filing this Notice of Appeal.

The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Deposit Account No. 15-0461. Two duplicate copies of this document are enclosed.

Respectfully submitted,

02/20/2004 SSANDARA 00000020 10058398
02 FC:1401 330.00 OP

William P. Berridge
Registration No. 30,024

Christopher W. Brown
Registration No. 38,025

WPB:CWB/rav
Date: February 19, 2004

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Michael H. SCHMITT

Group Art Unit: 1751

Application No.: 10/058,398

Examiner: P. Kumar

Filed: January 30, 2002

Docket No.: 111225

For: PROCEDURE FOR REMOVING A WATER-INSOLUBLE FINISH FROM ARAMIDE FIBERS

BRIEF ON APPEAL

Appeal from Group 1751

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400
Attorneys for Appellants

TABLE OF CONTENTS

I. INTRODUCTION

This is an Appeal from the final Office Action mailed September 9, 2003 rejecting claims 1-26 and 29-38 (all of the pending claims) of the present application.

A. Real Party In Interest

The real party in interest for this Appeal in the present application is Teijin Twaron GmbH, which received title by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 012544, Frame 0348.

B. Statement of Related Appeals and Interferences

There are presently no appeals or interferences, known to Appellant, Appellant's representative or the assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

C. Status of Claims

Claims 1-26 and 29-38 are pending and are on appeal. Claims 1-26 and 29-38 stand rejected on the grounds discussed further below. A copy of the claims on appeal are set forth in the attached Appendix.

Claim 1 is an independent claim from which claims 2-26 and 29-38 depend, either directly or indirectly.

D. Status of Amendments

No Amendment has been filed in response to the September 9, 2003 final Office Action. A Request for Reconsideration filed on October 30, 2003 was considered by the Examiner as noted in the Advisory Action mailed January 28, 2004. Confusingly, the Advisory Action indicates that the Request for Reconsideration will not be entered because it was found not to place the application in condition for allowance. It is Appellant's understanding that there is no procedure by which a timely filed Request for Reconsideration, as opposed to claim amendments, can be refused entry.

II. SUMMARY OF THE INVENTION

Aramide fibers are expensive in comparison to other synthetic fibers, and it is therefore worthwhile to recycle aramide fibers following their use. However, aramide fibers are often provided with a water-insoluble finish, e.g., with a cross-linked water-blocking finish or a water-repellant finish. As a result, these aramide fibers become accessible for recycling only after the water-insoluble finish on the fibers has been removed. See paragraph [0002] of the specification.

As set forth in paragraph [0005] of the specification, an object of the present invention is to provide a procedure for removing a cross-linked water-blocking or water-repellant finish from aramide fibers that is easy to execute and does not damage the aramide fibers.

The invention, as defined in present claim 1, relates to a procedure for removing a water-insoluble finish from aramide fibers having a water-insoluble finish thereon. The procedure comprises removing the water-insoluble finish from short-cut, random fiber or flat textile material aramide fibers by treating such aramide fibers with an agent that comprises at least one hydrophilic fluid. Where the aramide fiber is short-cut or random fiber, the treating is conducted in the wash cycle of a washing machine or by stirring. Where the aramide fiber is flat textile material, the treating is conducted in the wash cycle of a washing machine, by stirring or by treating with a water vapor stream. In the procedure, the at least one hydrophilic fluid is selected from the group consisting of water, dimethyl sulfoxide, a solution of dimethyl sulfoxide in water, an aliphatic cyclic ester with 2 to 4 alkylene groups or an aliphatic alcohol with 1 to 5 carbon atoms. See claim 1.

The fact that a water-insoluble finish is removed from aramide fibers with a hydrophilic fluid comes as a surprise, since a known characteristic of water-insoluble finishes, in particular, is that they are resistant to dissolution by a hydrophilic fluid. See paragraph [0008] of the specification.

III. THE APPLIED REFERENCES

A. U.S. Patent No. 4,759,770 to Cates et al. (hereinafter "Cates");

B. U.S. Patent No. 5,096,459 to Ghorashi (hereinafter "Ghorashi"); and

C. U.S. Patent No. 5,855,623 to English et al. (hereinafter "English").

IV. ISSUES

The final Office Action rejected the claims relying individually upon each of Cates, English and Ghorashi, and each of these rejections was addressed in the Request for Reconsideration. However, the Advisory Action commented further only upon the rejection based upon Cates. It is thus not clear whether the rejections based upon English and Ghorashi have been maintained or withdrawn. For completeness, and in view of the Examiner's comment that the Request for Reconsideration was "refused entry," Appellant assumes that the rejections based upon English and Ghorashi have also been maintained, and thus addresses such rejections in this Appeal Brief. Clarification of the rejections is requested from the Examiner.

The issues on appeal are thus believed to be as follows:

(1) Would the subject matter recited in claims 1-26, 29, 30 and 38 have been obvious to one of ordinary skill in the art from the teachings of Cates?

(2) Would the subject matter recited in claims 1, 14-25 and 38 have been obvious to one of ordinary skill in the art from the teachings of Ghorashi?

(3) Would the subject matter recited in claims 1-8 and 26-38 have been anticipated by and/or obvious to one of ordinary skill in the art from the teachings of English?

V. GROUPING OF CLAIMS

For purposes of this Appeal, the rejected claims all stand or fall together.

VI. ARGUMENTS

A. Cates Fails to Teach or Suggest the Claimed Method

Claims 1-26, 29, 30 and 38 were rejected under 35 U.S.C. §103(a) as allegedly being obvious from U.S. Patent No. 4,759,770 (Cates).

Cates describes a process for simultaneously dyeing and improving the flame-resistant properties of poly(m-phenyleneisophthalamide) fibers using a swelling agent to introduce a dye and fire retardant into the fiber. An aqueous dimethylsulfoxide solution is preferably used as the swelling agent. See the Abstract.

1. Cates Does not Teach or Suggest Treatment of Aramide Fibers Having a Water-Insoluble Finish

The Examiner has asserted that the poly(m-phenyleneisophthalamide) fibers described in Cates are water-insoluble. Appellant does not disagree with this characterization, but strongly emphasizes that such fact is irrelevant with respect to the claimed process. Specifically, present claim 1 requires that a water-insoluble finish on aramide fibers be removed. The Examiner has merely stated a property of the fibers described in Cates, which indicates nothing regarding the properties of any finish thereon. That is, the fact that the poly(m-phenyleneisophthalamide) fibers described in Cates are water insoluble does not indicate that such fibers have any finish thereon at all, much less a water-insoluble finish.

The Examiner attempts to treat the fibers and a finish on the fibers as being one and the same, which is incorrect. The ordinary meaning of "finish," as confirmed by any English dictionary, is a final coating on a surface. A finish is thus a coating that is a distinct material from the thing coated with the finish. Appellant clearly used the term "finish" in its ordinary sense in the present application, as confirmed in the specification at, for example, paragraphs [0002] to [0005]. Here, it is described that before aramide fibers can be recycled, it is necessary to remove finishes (i.e., coatings) of distinct water-insoluble materials from the

surface of the aramide fibers, and that the present invention achieves a simple and straightforward method for achieving such removal. Appellant respectfully submits that the Examiner's attempted equating of the fiber itself to a fiber having a finish thereon is improper. The rejection must fail as nowhere does Cates teach or suggest aramide fibers having a water-insoluble finish thereon, much less teach or suggest a method of removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish.

2. Cates Does not Teach or Suggest Removal of a Water-Insoluble Finish From Aramide Fibers

Even if the ordinary meaning of "finish" was completely ignored and the Examiner's assertion that Cates' description of poly(m-phenyleneisophthalamide) fibers constituted description of an aramide fiber with a water-insoluble finish thereon, the rejection must still fail as improper. This is because it would be necessary for the Examiner to then establish that in the treatment of the fibers with the dye and fire retardant, that portion of the fibers that the Examiner somehow identifies as the water-insoluble finish portion would always necessarily be removed (since reliance upon an inherency theory requires the Examiner to establish a reasonable basis that the allegedly inherent result will necessarily always be achieved by following the teachings of a prior art reference). The Examiner has completely failed to provide (1) any explanation of what portion of the fibers allegedly consist of the finish coating and (2) any basis to assert that the treatment of the fiber in Cates would necessarily always remove such finish portion of the fibers.

In fact, Cates itself confirms that the Examiner cannot establish a basis to conclude that practicing Cates would somehow inherently achieve the claimed procedure. In the paragraph bridging columns 3 and 4 of Cates, it is explained that in the dyeing/fire retarding process of Cates, little to no damage occurs to the fibers. Obviously, if the fibers themselves were somehow found to satisfy a fiber with a finish thereon, the removal of the finish would

be removing a part of the fiber, or in other words would cause substantial damage to the fiber in removing that part of the fiber considered to be a finish portion. In view of the fact that Cates describes that little to no fiber damage occurs in the process, there is no basis upon which to assert that following Cates would always and necessarily remove a water-insoluble finish portion of the aramide fibers described in Cates.

Finally, it is emphasized that Cates not only fails to teach or suggest aramide fibers having a water-insoluble finish thereon, Cates also fails to teach or suggest any method that would remove such water-insoluble finish from the aramide fibers as required in the procedure of claim 1. To the contrary, Cates discloses at column 6, lines 20-28 that water-repellants, which are examples of water-insoluble finishes (see the present specification at paragraph [0002], second sentence), may be added to the fibers together with the swelling agent, fire retardant and dye, or as a post-treatment finish after dyeing, heating, washing and drying of the fabric. In other words, Cates describes adding water-insoluble finishes to the fibers, not removing such finishes. Further, the addition of water-insoluble materials in the process of Cates indicates that the polyamide fibers utilized in Cates are <u>not</u> provided with a water-insoluble finish prior to being dyed. Otherwise, the addition of water-repellants would be completely unnecessary.

3. The Requirement of a Water-Insoluble Finish is not Merely an Intended Use

In the Advisory Action, the Examiner asserts that the requirement that the aramide fibers have a water-insoluble finish thereon is merely an intended use carrying no patentable weight. Such is neither accurate nor correct.

First, the requirement that the aramide fibers include a water-insoluble finish thereon is clearly not merely an intended use. Rather, it is a required structural element of the aramide fibers subjected to the processing steps of the claimed method. The case law cited by

the Examiner in the Advisory Action is not on point with the facts of the present case at all. Both In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458 (CCPA 1963) relate to intended uses to be made of a claimed product or method of making such product. Neither relates to claims directed to a processing method as in the present invention.

In In re Casey, the claimed invention related to a machine for dispensing adhesive tape. The appellant in that case had argued that the machine of the claimed invention was a tape dispenser whereas the machine shown and described by the prior art was a perforating device. The differences thus did not involve any unobvious difference between the structures of the apparatuses, but related solely to the matter of use of the devices. The court stated that "The manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself", citing In re Otto, 136 USPQ 458 at 459 where the court had stated "First of all it should be remembered that the claims are directed to a particular device and a method of making that device, not to a method of curling hair wherein this particular device is used. It seems appellants are endeavoring to predicate patentability upon a certain procedure for curling hair using this device and involving a number of steps in the process. This process is irrelevant as is the recitation involving the hair being wound around the core insofar as the determination of whether these particular claims should be allowed or rejected."

Neither decision is on point with the facts of the present case, wherein a method of treating aramide fibers having a water-insoluble finish thereon is claimed in which the water-insoluble finish is removed from the fibers. Neither a product nor a method of making a product is claimed, and the use intended for the product is not an issue with respect to patentability of the claim as in the cited case law.

Second, if it is being alleged that the recitation of the water-insoluble finish upon the aramide fibers is a preamble recitation bearing no patentable weight, Appellant also disagrees

with any such assertion. The claims in the present case are analogous to the type of claim at issue in Eaton Corp. v. Rockwell International Corp., 66 USPQ2d 1271 (Fed. Cir. 2003). In that case, the method steps of the claim required the manipulation of particular structures that are identified and described in the preamble. The claims was thus found to be an example of "the claim drafter choosing to use both the preamble and the body to define the subject matter of the claimed invention," citing Bell Communications Research, Inc. v. Vitalink Communications Corp., 34 USPQ2d 1816, 1820 (Fed. Cir. 1995), as opposed to a preamble reciting an intended use for an invention that is defined in its entirety by the body of the claim. As in these cases, the preamble in the present application uses both the preamble and the body of the claim to define the invention, and therefore the preamble limits the claimed invention. Specifically, the preamble of claim 1 defines the structure of the material to be acted upon in the recited processing steps, which process steps are defined in the claim to remove the water-insoluble finish from the aramide fibers. The recitation that the process is carried out upon aramide fibers having a water-insoluble finish thereon is not merely a preamble or intended use recitation, but is clearly a required limitation to the claimed method.

4. Conclusion

Cates thus fails to teach or suggest a procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish as recited in claim 1. Reconsideration and withdrawal of this rejection are thus respectfully requested.

B. Ghorashi Does not Teach or Suggest the Claimed Method

Claims 1, 14-25 and 38 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over U.S. Patent No. 5,096,459 (Ghorashi).

Ghorashi teaches a method of dyeing a tow of poly(m-phenylene isophthalamide) fibers, which have been previously dried, comprising padding onto the surface of the fibers an

aqueous solution including a carrier and a water-soluble dye, and thereafter heating the fibers with steam. See the Abstract and col. 2, line 49 to col. 3, line 5 of Ghorashi.

Ghorashi nowhere teaches or suggests any procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish. Ghorashi thus would not have led one of ordinary skill in the art to the present invention.

Ghorashi is highly analogous to Cates with respect to how the Examiner relies upon the reference in rejecting the present claims. The following discussion thus reiterates the discussion above with respect to Cates.

1. Ghorashi Does not Teach or Suggest Treatment of Aramide Fibers Having a Water-Insoluble Finish

In the final Office Action, the Examiner asserted that the poly(m-phenylene isophthalamide) fibers described in Ghorashi were water-insoluble. Again, such fact is irrelevant with respect to the claimed process. Specifically, claim 1 of the present application requires that a water-insoluble finish from aramide fibers provided with a water-insoluble finish be removed. The Examiner has merely stated a property of the fibers described in Ghorashi, which indicates nothing regarding the properties of any finish thereon. That is, the fact that the poly(m-phenylene isophthalamide) fibers described in Ghorashi are water-insoluble does not indicate that such fibers have any finish thereon, much less a water-insoluble finish. Appellant respectfully submits that the Examiner's attempted equating of the fiber itself to a fiber having a finish thereon is improper, and the rejection must fail as nowhere does Ghorashi teach or suggest aramide fibers having a water-insoluble finish thereon, much less teach or suggest a method of removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish.

2. Ghorashi Does not Teach or Suggest Removal of a Water-Insoluble Finish From Aramide Fibers

Even if the ordinary meaning of "finish" was completely ignored and the Examiner's assertion that Ghorashi's description of poly(m-phenylene isophthalamide) fibers constituted description of an aramide fiber with a water-insoluble finish thereon, the rejection must still fail as improper. This is because it would be necessary for the Examiner to establish that in the treatment to dye and fire retard the fibers, that portion of the fibers that the Examiner somehow identifies as the water-insoluble finish portion would always necessarily be removed (since reliance upon an inherency theory requires the Examiner to establish a reasonable basis that the allegedly inherent result will necessarily always be achieved by following the teachings of a prior art reference). The Examiner here again has completely failed to provide (1) any explanation of what portion of the fibers allegedly consist of the finish coating and (2) any basis to assert that the treatment of the fiber in Ghorashi would necessarily always remove such finish portion of the fibers.

In fact, Ghorashi itself confirms that the Examiner cannot establish a basis to conclude that practicing Ghorashi would somehow inherently achieve the claimed procedure. In Example 1 of Ghorashi, it is indicated at the top of column 6 that the fibers before and after dyeing had substantially the same physical properties. Obviously, if the fibers themselves are somehow found to satisfy a fiber with a finish thereon, the removal of the finish would be removing a part of the fiber, and such would cause the physical properties of the fiber before and after dyeing to be substantially changed in that a significant part of the fiber that is considered to be a finish portion would have been removed. In view of the fact that Ghorashi describes that substantially no change in physical properties of the fiber occurs in the process, there is no basis upon which to assert that following the process of Ghorashi would always

and necessarily remove a water-insoluble finish portion of the aramide fibers described in Ghorashi.

Finally, it is emphasized that Ghorashi not only fails to teach or suggest aramide fibers having a water-insoluble finish thereon, Ghorashi also fails to teach or suggest any method that would remove such water-insoluble finish from the aramide fibers as required in the procedure of claim 1. While the Examiner cited Example 1 (acetophenone) and Example 2 (benzyl alcohol) of Ghorashi, neither of these materials in Ghorashi is within the hydrophilic fluid Markush group of claim 1. Benzyl alcohol is not an aliphatic alcohol of 1 to 5 carbon atoms, but is an aromatic alcohol with 7 carbon atoms. Ghorashi thus fails to teach or suggest a procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish as recited in claim 1 for this additional reason.

3. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that nothing in Ghorashi would have led one of ordinary skill in the art to the presently claimed invention of claim 1 or claims dependent therefrom. Reconsideration and withdrawal of this rejection are thus respectfully requested.

C. English Does not Teach or Suggest the Claimed Method

Claims 1-8 and 26-38 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over, U.S. Patent No. 5,855,623 (English).

English discloses a process for treating polyester, polyamide, acrylic, aramide or cellulose substrates to improve the uniformity of polymerization on the substrate, to provide uniform dyeability and to provide even substrate treatment to improve the hydrophilic properties of the substrates. See the Abstract, col. 3, lines 6-67 and col. 4, lines 18-19.

At col. 13, line 64 to col. 14, line 22, English discloses a process of treating polyamide, acrylic, aramide and cellulose substrates, with reference to polyamide fibers for convenience, and states that treatment of each polymer substrate includes the basic steps of: (1) scouring the fibers with an aqueous alkaline solution to improve the uniform polymerization of the monomer on the substrate fibers by removing knitting oils and waxes; (2) contacting the scoured fibers free from knitting oils and waxes with an aqueous solution having a pH below seven but above where acid degradation of the polymer fiber occurs and a temperature between about 75°C and about 100°C and containing at least one unsaturated monomer to effect single molecule addition of a monomer pendent to the polymer fiber; and (3) polymerizing the monomer on the polymer surface using a polymerization initiator to allow graft polymerization of the monomer on the fiber surface to modify the surface characteristics of the polymer fibers.

1. Step (1) in English Does not Teach or Suggest Treatment with the Hydrophilic Fluids Recited in Claim 1

In step (1), English requires that the scouring be conducted with an aqueous alkaline solution in order to be effective. Such does not teach or suggest scouring with a hydrophilic fluid selected from the group consisting of (a) water, (b) dimethyl sulfoxide, (c) a solution of dimethyl sulfoxide in water, (d) an aliphatic cyclic ester with 2 to 4 alkylene groups and (e) an aliphatic alcohol with 1 to 5 carbon atoms. English requires the presence of the alkaline material in order for the solution to have a certain pH so as to be able to remove knitting oils and waxes, and thus nothing in English would have led one to have omitted the alkaline material and used just water in the scouring procedure of English.

At column 14, lines 52-64, English describes that the alkaline solution may have a pH of about 9 to 11 and be made by adding to water sodium phosphate, trisodium phosphate (TSP), tetrasodium pyrophosphate (TSPP), ammonia, soda ash or sodium hydroxide. A

scouring agent such as ethoxylated nonylphenol, alcohol ethoxylates, alcohol sulfonates, alkyl benzenesulfonates, or phosphate esters is preferably added to the alkaline solution.

Nowhere does English teach or suggest use of a hydrophilic fluid selected from the group consisting of (a) water, (b) dimethyl sulfoxide, (c) a solution of dimethyl sulfoxide in water, (d) an aliphatic cyclic ester with 2 to 4 alkylene groups and (e) an aliphatic alcohol with 1 to 5 carbon atoms for any use whatsoever, much less to remove a water-insoluble finish from an aramide fiber.

In the final Office Action, the Examiner asserted that claim 1 does not exclude the use of the alkaline aqueous solutions of English. Appellant disagrees with the conclusion of the Examiner.

First, the hydrophilic fluid to be used in the procedure of present claim 1 is defined as a Markush group. Proper Markush group language is either "wherein R is selected from the group consisting of A, B, C and D" or "wherein R is A, B, C or D." These alternative phrases have the same meaning in defining a Markush group. See MPEP §2173.05(h).I. (final paragraph before "Subgenus Claim"). For a reference to satisfy a Markush group limitation, the reference must teach at least one member of the group. See MPEP §803.02 regarding examination of Markush-type claim language. Thus, it is incorrect for the Examiner to assert that limiting the hydrophilic fluids to only those specified in the Markush group does not exclude the non-recited alkaline solutions of English.

Second, English fails to teach or suggest any of the hydrophilic fluids required in present claim 1. As such, English clearly fails to teach or suggest the claimed procedure. Nothing in English would have led one to have used the recited hydrophilic fluids in place of or in conjunction with the harsh aqueous alkaline solutions required by English.

2. The Use of Surfactants in English Also Does not Teach or Suggest Treatment with the Hydrophilic Fluids Recited in Claim 1

Finally, the Examiner asserted that English described the use of surfactants. However, these surfactants are not used in the scouring procedure. English describes such surfactants at column 7, lines 4-38 as possibly being included to form an emulsion with the monomer utilized in step (2) of English. English does not teach or suggest the use of such surfactants in the scouring step (1) therein. Further, this step (2) in English cannot be found to have taught or suggested the procedure of present claim 1 because the fibers in step (2) in English have already been subjected to scouring. That is, exposure of the fibers in English to the monomer emulsion in order to coat the monomer upon the surface of the polymer fiber completely fails to teach or suggest a procedure for removing a water-insoluble finish from an aramide fiber having a water-insoluble finish thereon. The step (2) in English thus describes the addition of a monomer layer on the fiber surface and cannot be found to have taught or suggested the procedure of claim 1 of the present application.

3. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that nothing in English would have taught or suggested the invention of present claim 1 or claims dependent therefrom to one of ordinary skill in the art. Reconsideration and withdrawal of this rejection are respectfully requested.

D. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that the teachings of Cates, English and Ghorashi fail to anticipate or render obvious the claimed invention.

VII. CONCLUSION

For all of the reasons discussed above, it is respectfully submitted that it would not have been known or obvious to a person of ordinary skill in the art, at the time the invention

was made, to make the subject invention from the teachings of any of the art relied upon by the Examiner, taken alone or in any combination. Appellants respectfully request that this Honorable Board reverse the rejection of claims 1-26 and 29-38.

Respectfully submitted,

William P. Berridge
Registration No. 30,024

Christopher W. Brown
Registration No. 38,025

WPB:CWB/rav

Date: February 19, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

APPENDIX

CLAIMS:

1. A procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish, comprising treating the aramide fibers with an agent that comprises at least one hydrophilic fluid, wherein the aramide fibers are present as a short-cut, random fiber or flat textile material, wherein the treating of the short-cut or random fiber is treating in the wash cycle of a washing machine or stirring, and wherein the treating of the flat textile material is treating in the wash cycle of a washing machine, stirring or treating with a water vapor stream, and wherein the at least one hydrophilic fluid is water, dimethyl sulfoxide, a solution of dimethyl sulfoxide in water, an aliphatic cyclic ester with 2 to 4 alkylene groups or an aliphatic alcohol with 1 to 5 carbon atoms.

2. The procedure according to claim 1, wherein the water-insoluble finish of the aramide fibers is a cross-linked water-blocking finish.

3. The procedure according to claim 1, wherein the water-insoluble finish of the aramide fibers is a water-repellant finish.

4. The procedure according to claim 1, wherein the aramide fibers comprise m- or p-aramide.

5. The procedure according to claim 1, wherein the at least one hydrophilic fluid is water.

6. The procedure according to claim 5, wherein the water has a temperature ranging from about 60 to about 120°C.

7. The procedure according to claim 5, wherein the water has a temperature ranging from about 85 to about 110°C.

8. The procedure according to claim 5, wherein the water has a temperature of about 100°C.

9. The procedure according to claim 1, wherein the at least one hydrophilic fluid is dimethyl sulfoxide or a solution of dimethyl sulfoxide in water.

10. The procedure according to claim 9, wherein a concentration of dimethyl sulfoxide in water is from about 30 to 100 %w/w.

11. The procedure according to claim 9, wherein a concentration of dimethyl sulfoxide in water is from about 70 to 100 %w/w.

12. The procedure according to claim 9, wherein a temperature of the dimethyl sulfoxide or its aqueous solution is from about 20 to about 140°C.

13. The procedure according to claim 9, wherein a temperature of the dimethyl sulfoxide or its aqueous solution is from about 70 to about 110°C.

14. The procedure according to claim 1, wherein the at least one hydrophilic fluid is an aqueous solution of an aliphatic cyclic ester with 2 to 4 alkylene groups.

15. The procedure according to claim 14, wherein the aliphatic cyclic ester is χ-butyrolactone.

16. The procedure according to claim 14, wherein a concentration of the aliphatic cyclic ester in water is from about 30 to about 80 %w/w.

17. The procedure according to claim 14, wherein a concentration of the aliphatic cyclic ester in water is from about 50 to about 70 %w/w.

18. The procedure according to claim 14, wherein a temperature of the aqueous solution of the aliphatic cyclic ester is from about 20 to about 90°C.

19. The procedure according to claim 14, wherein a temperature of the aqueous solution of the aliphatic cyclic ester is from about 60 to about 90°C.

20. The procedure according to claim 1, wherein the at least one hydrophilic fluid is an aqueous solution of at least one aliphatic alcohol with 1 to 5 carbon atoms.

21. The procedure according to claim 20, wherein the aliphatic alcohol is methanol, ethanol, 1-propanol, isopropyl alcohol, 1-butanol, isobutyl alcohol, 2-butanol, tert-butanol, 1-pentanol, 2-pentanol, 3-pentanol or 2,2-dimethyl-1-propanol, individually or in combination.

22. The procedure according to claim 20, wherein a concentration of the aliphatic alcohol in water is from about 25 to about 70 %w/w.

23. The procedure according to claim 20, wherein a concentration of the aliphatic alcohol in water is from about 40 to about 70 %w/w.

24. The procedure according to claim 20, wherein a temperature of the aqueous solution of the aliphatic alcohol is from about 20 to about 60°C.

25. The procedure according to claim 20, wherein a temperature of the aqueous solution of the aliphatic alcohol is from about 40 to about 60°C.

26. The procedure according to claim 1, wherein the treating comprises stirring the aramide fibers in at least one hydrophilic solvent that optionally contains a defoamer.

27. (Canceled).

28. (Canceled).

29. The procedure according to claim 1, wherein a weight ratio of the aramide fibers to the at least one hydrophilic fluid is from about 1:14 to about 1:1.

30. The procedure according to claim 29, wherein the weight ratio of the aramide fibers to the at least one hydrophilic fluid is from about 1:14 to about 1:6.

31. The procedure according to claim 1, wherein the agent further contains a defoamer.

32. The procedure according to claim 31, wherein the defoamer is a surfactant or a surfactant-containing composition.

33. The procedure according to claim 32, wherein the surfactant-containing composition is a detergent.

34. The procedure according to claim 31, wherein the defoamer in the at least one hydrophilic fluid is present in a concentration of from about 0.01 to about 3 %w/w.

35. The procedure according to claim 31, wherein the defoamer in the at least one hydrophilic fluid is present in a concentration of from about 0.1 to about 2 %w/w.

36. The procedure according to claim 31, wherein the defoamer in the at least one hydrophilic fluid is present in a concentration of about 1 %w/w.

37. A process for forming a material, comprising removing a water-insoluble finish from aramide fibers in accordance with the procedure of claim 1 to derive treated aramide fibers, and subsequently forming the treated aramide fibers into pulp or into a mixture with other fibers of synthetic or natural origin.

38. The process according to claim 37, wherein the treated aramide fibers have a swelling value of ≤ 40 %.

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Michael H. SCHMITT

Group Art Unit: 1751

Application No.: 10/058,398

Examiner: P. Kumar

Filed: January 30, 2002

Docket No.: 111225

For: PROCEDURE FOR REMOVING A WATER-INSOLUBLE FINISH FROM ARAMIDE FIBERS

BRIEF ON APPEAL

Appeal from Group 1751

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400
Attorneys for Appellants

TABLE OF CONTENTS

I. INTRODUCTION

This is an Appeal from the final Office Action mailed September 9, 2003 rejecting claims 1-26 and 29-38 (all of the pending claims) of the present application.

A. Real Party In Interest

The real party in interest for this Appeal in the present application is Teijin Twaron GmbH, which received title by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 012544, Frame 0348.

B. Statement of Related Appeals and Interferences

There are presently no appeals or interferences, known to Appellant, Appellant's representative or the assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending Appeal.

C. Status of Claims

Claims 1-26 and 29-38 are pending and are on appeal. Claims 1-26 and 29-38 stand rejected on the grounds discussed further below. A copy of the claims on appeal are set forth in the attached Appendix.

Claim 1 is an independent claim from which claims 2-26 and 29-38 depend, either directly or indirectly.

D. Status of Amendments

No Amendment has been filed in response to the September 9, 2003 final Office Action. A Request for Reconsideration filed on October 30, 2003 was considered by the Examiner as noted in the Advisory Action mailed January 28, 2004. Confusingly, the Advisory Action indicates that the Request for Reconsideration will not be entered because it was found not to place the application in condition for allowance. It is Appellant's understanding that there is no procedure by which a timely filed Request for Reconsideration, as opposed to claim amendments, can be refused entry.

II. SUMMARY OF THE INVENTION

Aramide fibers are expensive in comparison to other synthetic fibers, and it is therefore worthwhile to recycle aramide fibers following their use. However, aramide fibers are often provided with a water-insoluble finish, e.g., with a cross-linked water-blocking finish or a water-repellant finish. As a result, these aramide fibers become accessible for recycling only after the water-insoluble finish on the fibers has been removed. See paragraph [0002] of the specification.

As set forth in paragraph [0005] of the specification, an object of the present invention is to provide a procedure for removing a cross-linked water-blocking or water-repellant finish from aramide fibers that is easy to execute and does not damage the aramide fibers.

The invention, as defined in present claim 1, relates to a procedure for removing a water-insoluble finish from aramide fibers having a water-insoluble finish thereon. The procedure comprises removing the water-insoluble finish from short-cut, random fiber or flat textile material aramide fibers by treating such aramide fibers with an agent that comprises at least one hydrophilic fluid. Where the aramide fiber is short-cut or random fiber, the treating is conducted in the wash cycle of a washing machine or by stirring. Where the aramide fiber is flat textile material, the treating is conducted in the wash cycle of a washing machine, by stirring or by treating with a water vapor stream. In the procedure, the at least one hydrophilic fluid is selected from the group consisting of water, dimethyl sulfoxide, a solution of dimethyl sulfoxide in water, an aliphatic cyclic ester with 2 to 4 alkylene groups or an aliphatic alcohol with 1 to 5 carbon atoms. See claim 1.

The fact that a water-insoluble finish is removed from aramide fibers with a hydrophilic fluid comes as a surprise, since a known characteristic of water-insoluble finishes, in particular, is that they are resistant to dissolution by a hydrophilic fluid. See paragraph [0008] of the specification.

III. THE APPLIED REFERENCES

A. U.S. Patent No. 4,759,770 to Cates et al. (hereinafter "Cates");

B. U.S. Patent No. 5,096,459 to Ghorashi (hereinafter "Ghorashi"); and

C. U.S. Patent No. 5,855,623 to English et al. (hereinafter "English").

IV. ISSUES

The final Office Action rejected the claims relying individually upon each of Cates, English and Ghorashi, and each of these rejections was addressed in the Request for Reconsideration. However, the Advisory Action commented further only upon the rejection based upon Cates. It is thus not clear whether the rejections based upon English and Ghorashi have been maintained or withdrawn. For completeness, and in view of the Examiner's comment that the Request for Reconsideration was "refused entry," Appellant assumes that the rejections based upon English and Ghorashi have also been maintained, and thus addresses such rejections in this Appeal Brief. Clarification of the rejections is requested from the Examiner.

The issues on appeal are thus believed to be as follows:

(1) Would the subject matter recited in claims 1-26, 29, 30 and 38 have been obvious to one of ordinary skill in the art from the teachings of Cates?

(2) Would the subject matter recited in claims 1, 14-25 and 38 have been obvious to one of ordinary skill in the art from the teachings of Ghorashi?

(3) Would the subject matter recited in claims 1-8 and 26-38 have been anticipated by and/or obvious to one of ordinary skill in the art from the teachings of English?

V. GROUPING OF CLAIMS

For purposes of this Appeal, the rejected claims all stand or fall together.

VI. ARGUMENTS

A. Cates Fails to Teach or Suggest the Claimed Method

Claims 1-26, 29, 30 and 38 were rejected under 35 U.S.C. §103(a) as allegedly being obvious from U.S. Patent No. 4,759,770 (Cates).

Cates describes a process for simultaneously dyeing and improving the flame-resistant properties of poly(m-phenyleneisophthalamide) fibers using a swelling agent to introduce a dye and fire retardant into the fiber. An aqueous dimethylsulfoxide solution is preferably used as the swelling agent. See the Abstract.

1. Cates Does not Teach or Suggest Treatment of Aramide Fibers Having a Water-Insoluble Finish

The Examiner has asserted that the poly(m-phenyleneisophthalamide) fibers described in Cates are water-insoluble. Appellant does not disagree with this characterization, but strongly emphasizes that such fact is irrelevant with respect to the claimed process. Specifically, present claim 1 requires that a water-insoluble finish on aramide fibers be removed. The Examiner has merely stated a property of the fibers described in Cates, which indicates nothing regarding the properties of any finish thereon. That is, the fact that the poly(m-phenyleneisophthalamide) fibers described in Cates are water insoluble does not indicate that such fibers have any finish thereon at all, much less a water-insoluble finish.

The Examiner attempts to treat the fibers and a finish on the fibers as being one and the same, which is incorrect. The ordinary meaning of "finish," as confirmed by any English dictionary, is a final coating on a surface. A finish is thus a coating that is a distinct material from the thing coated with the finish. Appellant clearly used the term "finish" in its ordinary sense in the present application, as confirmed in the specification at, for example, paragraphs [0002] to [0005]. Here, it is described that before aramide fibers can be recycled, it is necessary to remove finishes (i.e., coatings) of distinct water-insoluble materials from the

surface of the aramide fibers, and that the present invention achieves a simple and straightforward method for achieving such removal. Appellant respectfully submits that the Examiner's attempted equating of the fiber itself to a fiber having a finish thereon is improper. The rejection must fail as nowhere does Cates teach or suggest aramide fibers having a water-insoluble finish thereon, much less teach or suggest a method of removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish.

2. Cates Does not Teach or Suggest Removal of a Water-Insoluble Finish From Aramide Fibers

Even if the ordinary meaning of "finish" was completely ignored and the Examiner's assertion that Cates' description of poly(m-phenyleneisophthalamide) fibers constituted description of an aramide fiber with a water-insoluble finish thereon, the rejection must still fail as improper. This is because it would be necessary for the Examiner to then establish that in the treatment of the fibers with the dye and fire retardant, that portion of the fibers that the Examiner somehow identifies as the water-insoluble finish portion would always necessarily be removed (since reliance upon an inherency theory requires the Examiner to establish a reasonable basis that the allegedly inherent result will necessarily always be achieved by following the teachings of a prior art reference). The Examiner has completely failed to provide (1) any explanation of what portion of the fibers allegedly consist of the finish coating and (2) any basis to assert that the treatment of the fiber in Cates would necessarily always remove such finish portion of the fibers.

In fact, Cates itself confirms that the Examiner cannot establish a basis to conclude that practicing Cates would somehow inherently achieve the claimed procedure. In the paragraph bridging columns 3 and 4 of Cates, it is explained that in the dyeing/fire retarding process of Cates, little to no damage occurs to the fibers. Obviously, if the fibers themselves were somehow found to satisfy a fiber with a finish thereon, the removal of the finish would

be removing a part of the fiber, or in other words would cause substantial damage to the fiber in removing that part of the fiber considered to be a finish portion. In view of the fact that Cates describes that little to no fiber damage occurs in the process, there is no basis upon which to assert that following Cates would always and necessarily remove a water-insoluble finish portion of the aramide fibers described in Cates.

Finally, it is emphasized that Cates not only fails to teach or suggest aramide fibers having a water-insoluble finish thereon, Cates also fails to teach or suggest any method that would remove such water-insoluble finish from the aramide fibers as required in the procedure of claim 1. To the contrary, Cates discloses at column 6, lines 20-28 that water-repellants, which are examples of water-insoluble finishes (see the present specification at paragraph [0002], second sentence), may be added to the fibers together with the swelling agent, fire retardant and dye, or as a post-treatment finish after dyeing, heating, washing and drying of the fabric. In other words, Cates describes adding water-insoluble finishes to the fibers, not removing such finishes. Further, the addition of water-insoluble materials in the process of Cates indicates that the polyamide fibers utilized in Cates are <u>not</u> provided with a water-insoluble finish prior to being dyed. Otherwise, the addition of water-repellants would be completely unnecessary.

3. <u>The Requirement of a Water-Insoluble Finish is not Merely an Intended Use</u>

In the Advisory Action, the Examiner asserts that the requirement that the aramide fibers have a water-insoluble finish thereon is merely an intended use carrying no patentable weight. Such is neither accurate nor correct.

First, the requirement that the aramide fibers include a water-insoluble finish thereon is clearly not merely an intended use. Rather, it is a required structural element of the aramide fibers subjected to the processing steps of the claimed method. The case law cited by

the Examiner in the Advisory Action is not on point with the facts of the present case at all. Both In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458 (CCPA 1963) relate to intended uses to be made of a claimed product or method of making such product. Neither relates to claims directed to a processing method as in the present invention.

In In re Casey, the claimed invention related to a machine for dispensing adhesive tape. The appellant in that case had argued that the machine of the claimed invention was a tape dispenser whereas the machine shown and described by the prior art was a perforating device. The differences thus did not involve any unobvious difference between the structures of the apparatuses, but related solely to the matter of use of the devices. The court stated that "The manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself", citing In re Otto, 136 USPQ 458 at 459 where the court had stated "First of all it should be remembered that the claims are directed to a particular device and a method of making that device, not to a method of curling hair wherein this particular device is used. It seems appellants are endeavoring to predicate patentability upon a certain procedure for curling hair using this device and involving a number of steps in the process. This process is irrelevant as is the recitation involving the hair being wound around the core insofar as the determination of whether these particular claims should be allowed or rejected."

Neither decision is on point with the facts of the present case, wherein a method of treating aramide fibers having a water-insoluble finish thereon is claimed in which the water-insoluble finish is removed from the fibers. Neither a product nor a method of making a product is claimed, and the use intended for the product is not an issue with respect to patentability of the claim as in the cited case law.

Second, if it is being alleged that the recitation of the water-insoluble finish upon the aramide fibers is a preamble recitation bearing no patentable weight, Appellant also disagrees

with any such assertion. The claims in the present case are analogous to the type of claim at issue in Eaton Corp. v. Rockwell International Corp., 66 USPQ2d 1271 (Fed. Cir. 2003). In that case, the method steps of the claim required the manipulation of particular structures that are identified and described in the preamble. The claims was thus found to be an example of "the claim drafter choosing to use both the preamble and the body to define the subject matter of the claimed invention," citing Bell Communications Research, Inc. v. Vitalink Communications Corp., 34 USPQ2d 1816, 1820 (Fed. Cir. 1995), as opposed to a preamble reciting an intended use for an invention that is defined in its entirety by the body of the claim. As in these cases, the preamble in the present application uses both the preamble and the body of the claim to define the invention, and therefore the preamble limits the claimed invention. Specifically, the preamble of claim 1 defines the structure of the material to be acted upon in the recited processing steps, which process steps are defined in the claim to remove the water-insoluble finish from the aramide fibers. The recitation that the process is carried out upon aramide fibers having a water-insoluble finish thereon is not merely a preamble or intended use recitation, but is clearly a required limitation to the claimed method.

4. Conclusion

Cates thus fails to teach or suggest a procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish as recited in claim 1. Reconsideration and withdrawal of this rejection are thus respectfully requested.

B. Ghorashi Does not Teach or Suggest the Claimed Method

Claims 1, 14-25 and 38 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over U.S. Patent No. 5,096,459 (Ghorashi).

Ghorashi teaches a method of dyeing a tow of poly(m-phenylene isophthalamide) fibers, which have been previously dried, comprising padding onto the surface of the fibers an

aqueous solution including a carrier and a water-soluble dye, and thereafter heating the fibers with steam. See the Abstract and col. 2, line 49 to col. 3, line 5 of Ghorashi.

Ghorashi nowhere teaches or suggests any procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish. Ghorashi thus would not have led one of ordinary skill in the art to the present invention.

Ghorashi is highly analogous to Cates with respect to how the Examiner relies upon the reference in rejecting the present claims. The following discussion thus reiterates the discussion above with respect to Cates.

1. Ghorashi Does not Teach or Suggest Treatment of Aramide Fibers Having a Water-Insoluble Finish

In the final Office Action, the Examiner asserted that the poly(m-phenylene isophthalamide) fibers described in Ghorashi were water-insoluble. Again, such fact is irrelevant with respect to the claimed process. Specifically, claim 1 of the present application requires that a water-insoluble finish from aramide fibers provided with a water-insoluble finish be removed. The Examiner has merely stated a property of the fibers described in Ghorashi, which indicates nothing regarding the properties of any finish thereon. That is, the fact that the poly(m-phenylene isophthalamide) fibers described in Ghorashi are water-insoluble does not indicate that such fibers have any finish thereon, much less a water-insoluble finish. Appellant respectfully submits that the Examiner's attempted equating of the fiber itself to a fiber having a finish thereon is improper, and the rejection must fail as nowhere does Ghorashi teach or suggest aramide fibers having a water-insoluble finish thereon, much less teach or suggest a method of removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish.

2. Ghorashi Does not Teach or Suggest Removal of a Water-Insoluble Finish From Aramide Fibers

Even if the ordinary meaning of "finish" was completely ignored and the Examiner's assertion that Ghorashi's description of poly(m-phenylene isophthalamide) fibers constituted description of an aramide fiber with a water-insoluble finish thereon, the rejection must still fail as improper. This is because it would be necessary for the Examiner to establish that in the treatment to dye and fire retard the fibers, that portion of the fibers that the Examiner somehow identifies as the water-insoluble finish portion would always necessarily be removed (since reliance upon an inherency theory requires the Examiner to establish a reasonable basis that the allegedly inherent result will necessarily always be achieved by following the teachings of a prior art reference). The Examiner here again has completely failed to provide (1) any explanation of what portion of the fibers allegedly consist of the finish coating and (2) any basis to assert that the treatment of the fiber in Ghorashi would necessarily always remove such finish portion of the fibers.

In fact, Ghorashi itself confirms that the Examiner cannot establish a basis to conclude that practicing Ghorashi would somehow inherently achieve the claimed procedure. In Example 1 of Ghorashi, it is indicated at the top of column 6 that the fibers before and after dyeing had substantially the same physical properties. Obviously, if the fibers themselves are somehow found to satisfy a fiber with a finish thereon, the removal of the finish would be removing a part of the fiber, and such would cause the physical properties of the fiber before and after dyeing to be substantially changed in that a significant part of the fiber that is considered to be a finish portion would have been removed. In view of the fact that Ghorashi describes that substantially no change in physical properties of the fiber occurs in the process, there is no basis upon which to assert that following the process of Ghorashi would always

and necessarily remove a water-insoluble finish portion of the aramide fibers described in Ghorashi.

Finally, it is emphasized that Ghorashi not only fails to teach or suggest aramide fibers having a water-insoluble finish thereon, Ghorashi also fails to teach or suggest any method that would remove such water-insoluble finish from the aramide fibers as required in the procedure of claim 1. While the Examiner cited Example 1 (acetophenone) and Example 2 (benzyl alcohol) of Ghorashi, neither of these materials in Ghorashi is within the hydrophilic fluid Markush group of claim 1. Benzyl alcohol is not an aliphatic alcohol of 1 to 5 carbon atoms, but is an aromatic alcohol with 7 carbon atoms. Ghorashi thus fails to teach or suggest a procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish as recited in claim 1 for this additional reason.

3. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that nothing in Ghorashi would have led one of ordinary skill in the art to the presently claimed invention of claim 1 or claims dependent therefrom. Reconsideration and withdrawal of this rejection are thus respectfully requested.

C. English Does not Teach or Suggest the Claimed Method

Claims 1-8 and 26-38 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over, U.S. Patent No. 5,855,623 (English).

English discloses a process for treating polyester, polyamide, acrylic, aramide or cellulose substrates to improve the uniformity of polymerization on the substrate, to provide uniform dyeability and to provide even substrate treatment to improve the hydrophilic properties of the substrates. See the Abstract, col. 3, lines 6-67 and col. 4, lines 18-19.

At col. 13, line 64 to col. 14, line 22, English discloses a process of treating polyamide, acrylic, aramide and cellulose substrates, with reference to polyamide fibers for convenience, and states that treatment of each polymer substrate includes the basic steps of: (1) scouring the fibers with an aqueous alkaline solution to improve the uniform polymerization of the monomer on the substrate fibers by removing knitting oils and waxes; (2) contacting the scoured fibers free from knitting oils and waxes with an aqueous solution having a pH below seven but above where acid degradation of the polymer fiber occurs and a temperature between about 75°C and about 100°C and containing at least one unsaturated monomer to effect single molecule addition of a monomer pendent to the polymer fiber; and (3) polymerizing the monomer on the polymer surface using a polymerization initiator to allow graft polymerization of the monomer on the fiber surface to modify the surface characteristics of the polymer fibers.

1. Step (1) in English Does not Teach or Suggest Treatment with the Hydrophilic Fluids Recited in Claim 1

In step (1), English requires that the scouring be conducted with an aqueous alkaline solution in order to be effective. Such does not teach or suggest scouring with a hydrophilic fluid selected from the group consisting of (a) water, (b) dimethyl sulfoxide, (c) a solution of dimethyl sulfoxide in water, (d) an aliphatic cyclic ester with 2 to 4 alkylene groups and (e) an aliphatic alcohol with 1 to 5 carbon atoms. English requires the presence of the alkaline material in order for the solution to have a certain pH so as to be able to remove knitting oils and waxes, and thus nothing in English would have led one to have omitted the alkaline material and used just water in the scouring procedure of English.

At column 14, lines 52-64, English describes that the alkaline solution may have a pH of about 9 to 11 and be made by adding to water sodium phosphate, trisodium phosphate (TSP), tetrasodium pyrophosphate (TSPP), ammonia, soda ash or sodium hydroxide. A

scouring agent such as ethoxylated nonylphenol, alcohol ethoxylates, alcohol sulfonates, alkyl benzenesulfonates, or phosphate esters is preferably added to the alkaline solution.

Nowhere does English teach or suggest use of a hydrophilic fluid selected from the group consisting of (a) water, (b) dimethyl sulfoxide, (c) a solution of dimethyl sulfoxide in water, (d) an aliphatic cyclic ester with 2 to 4 alkylene groups and (e) an aliphatic alcohol with 1 to 5 carbon atoms for any use whatsoever, much less to remove a water-insoluble finish from an aramide fiber.

In the final Office Action, the Examiner asserted that claim 1 does not exclude the use of the alkaline aqueous solutions of English. Appellant disagrees with the conclusion of the Examiner.

First, the hydrophilic fluid to be used in the procedure of present claim 1 is defined as a Markush group. Proper Markush group language is either "wherein R is selected from the group consisting of A, B, C and D" or "wherein R is A, B, C or D." These alternative phrases have the same meaning in defining a Markush group. See MPEP §2173.05(h).I. (final paragraph before "Subgenus Claim"). For a reference to satisfy a Markush group limitation, the reference must teach at least one member of the group. See MPEP §803.02 regarding examination of Markush-type claim language. Thus, it is incorrect for the Examiner to assert that limiting the hydrophilic fluids to only those specified in the Markush group does not exclude the non-recited alkaline solutions of English.

Second, English fails to teach or suggest any of the hydrophilic fluids required in present claim 1. As such, English clearly fails to teach or suggest the claimed procedure. Nothing in English would have led one to have used the recited hydrophilic fluids in place of or in conjunction with the harsh aqueous alkaline solutions required by English.

2. The Use of Surfactants in English Also Does not Teach or Suggest Treatment with the Hydrophilic Fluids Recited in Claim 1

Finally, the Examiner asserted that English described the use of surfactants. However, these surfactants are not used in the scouring procedure. English describes such surfactants at column 7, lines 4-38 as possibly being included to form an emulsion with the monomer utilized in step (2) of English. English does not teach or suggest the use of such surfactants in the scouring step (1) therein. Further, this step (2) in English cannot be found to have taught or suggested the procedure of present claim 1 because the fibers in step (2) in English have already been subjected to scouring. That is, exposure of the fibers in English to the monomer emulsion in order to coat the monomer upon the surface of the polymer fiber completely fails to teach or suggest a procedure for removing a water-insoluble finish from an aramide fiber having a water-insoluble finish thereon. The step (2) in English thus describes the addition of a monomer layer on the fiber surface and cannot be found to have taught or suggested the procedure of claim 1 of the present application.

3. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that nothing in English would have taught or suggested the invention of present claim 1 or claims dependent therefrom to one of ordinary skill in the art. Reconsideration and withdrawal of this rejection are respectfully requested.

D. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that the teachings of Cates, English and Ghorashi fail to anticipate or render obvious the claimed invention.

VII. CONCLUSION

For all of the reasons discussed above, it is respectfully submitted that it would not have been known or obvious to a person of ordinary skill in the art, at the time the invention

was made, to make the subject invention from the teachings of any of the art relied upon by the Examiner, taken alone or in any combination. Appellants respectfully request that this Honorable Board reverse the rejection of claims 1-26 and 29-38.

Respectfully submitted,

William P. Berridge
Registration No. 30,024

Christopher W. Brown
Registration No. 38,025

WPB:CWB/rav

Date: February 19, 2004

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

APPENDIX

CLAIMS:

1. A procedure for removing a water-insoluble finish from aramide fibers provided with a water-insoluble finish, comprising treating the aramide fibers with an agent that comprises at least one hydrophilic fluid, wherein the aramide fibers are present as a short-cut, random fiber or flat textile material, wherein the treating of the short-cut or random fiber is treating in the wash cycle of a washing machine or stirring, and wherein the treating of the flat textile material is treating in the wash cycle of a washing machine, stirring or treating with a water vapor stream, and wherein the at least one hydrophilic fluid is water, dimethyl sulfoxide, a solution of dimethyl sulfoxide in water, an aliphatic cyclic ester with 2 to 4 alkylene groups or an aliphatic alcohol with 1 to 5 carbon atoms.

2. The procedure according to claim 1, wherein the water-insoluble finish of the aramide fibers is a cross-linked water-blocking finish.

3. The procedure according to claim 1, wherein the water-insoluble finish of the aramide fibers is a water-repellant finish.

4. The procedure according to claim 1, wherein the aramide fibers comprise m- or p-aramide.

5. The procedure according to claim 1, wherein the at least one hydrophilic fluid is water.

6. The procedure according to claim 5, wherein the water has a temperature ranging from about 60 to about 120°C.

7. The procedure according to claim 5, wherein the water has a temperature ranging from about 85 to about 110°C.

8. The procedure according to claim 5, wherein the water has a temperature of about 100°C.

9. The procedure according to claim 1, wherein the at least one hydrophilic fluid is dimethyl sulfoxide or a solution of dimethyl sulfoxide in water.

10. The procedure according to claim 9, wherein a concentration of dimethyl sulfoxide in water is from about 30 to 100 %w/w.

11. The procedure according to claim 9, wherein a concentration of dimethyl sulfoxide in water is from about 70 to 100 %w/w.

12. The procedure according to claim 9, wherein a temperature of the dimethyl sulfoxide or its aqueous solution is from about 20 to about 140°C.

13. The procedure according to claim 9, wherein a temperature of the dimethyl sulfoxide or its aqueous solution is from about 70 to about 110°C.

14. The procedure according to claim 1, wherein the at least one hydrophilic fluid is an aqueous solution of an aliphatic cyclic ester with 2 to 4 alkylene groups.

15. The procedure according to claim 14, wherein the aliphatic cyclic ester is χ-butyrolactone.

16. The procedure according to claim 14, wherein a concentration of the aliphatic cyclic ester in water is from about 30 to about 80 %w/w.

17. The procedure according to claim 14, wherein a concentration of the aliphatic cyclic ester in water is from about 50 to about 70 %w/w.

18. The procedure according to claim 14, wherein a temperature of the aqueous solution of the aliphatic cyclic ester is from about 20 to about 90°C.

19. The procedure according to claim 14, wherein a temperature of the aqueous solution of the aliphatic cyclic ester is from about 60 to about 90°C.

20. The procedure according to claim 1, wherein the at least one hydrophilic fluid is an aqueous solution of at least one aliphatic alcohol with 1 to 5 carbon atoms.

21. The procedure according to claim 20, wherein the aliphatic alcohol is methanol, ethanol, 1-propanol, isopropyl alcohol, 1-butanol, isobutyl alcohol, 2-butanol, tert-butanol, 1-pentanol, 2-pentanol, 3-pentanol or 2,2-dimethyl-1-propanol, individually or in combination.

22. The procedure according to claim 20, wherein a concentration of the aliphatic alcohol in water is from about 25 to about 70 %w/w.

23. The procedure according to claim 20, wherein a concentration of the aliphatic alcohol in water is from about 40 to about 70 %w/w.

24. The procedure according to claim 20, wherein a temperature of the aqueous solution of the aliphatic alcohol is from about 20 to about 60°C.

25. The procedure according to claim 20, wherein a temperature of the aqueous solution of the aliphatic alcohol is from about 40 to about 60°C.

26. The procedure according to claim 1, wherein the treating comprises stirring the aramide fibers in at least one hydrophilic solvent that optionally contains a defoamer.

27. (Canceled).

28. (Canceled).

29. The procedure according to claim 1, wherein a weight ratio of the aramide fibers to the at least one hydrophilic fluid is from about 1:14 to about 1:1.

30. The procedure according to claim 29, wherein the weight ratio of the aramide fibers to the at least one hydrophilic fluid is from about 1:14 to about 1:6.

31. The procedure according to claim 1, wherein the agent further contains a defoamer.

32. The procedure according to claim 31, wherein the defoamer is a surfactant or a surfactant-containing composition.

33. The procedure according to claim 32, wherein the surfactant-containing composition is a detergent.

34. The procedure according to claim 31, wherein the defoamer in the at least one hydrophilic fluid is present in a concentration of from about 0.01 to about 3 %w/w.

35. The procedure according to claim 31, wherein the defoamer in the at least one hydrophilic fluid is present in a concentration of from about 0.1 to about 2 %w/w.

36. The procedure according to claim 31, wherein the defoamer in the at least one hydrophilic fluid is present in a concentration of about 1 %w/w.

37. A process for forming a material, comprising removing a water-insoluble finish from aramide fibers in accordance with the procedure of claim 1 to derive treated aramide fibers, and subsequently forming the treated aramide fibers into pulp or into a mixture with other fibers of synthetic or natural origin.

38. The process according to claim 37, wherein the treated aramide fibers have a swelling value of ≤ 40 %.